

Proposed Methodology for Particulate Matter Risk Analyses for Selected Urban Areas

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February 27, 2002 Presentation to
CASAC

Background

- As Part of Last PM NAAQS Review (1996/1997) EPA Conducted PM Risk Analyses for 2 Urban Counties (Philadelphia & LA)
 - Examined recent year of air quality, meeting current PM₁₀ standard, and alternative PM_{2.5} standards
 - Role of risk analysis was necessarily limited and focused on gaining insights into the nature of the risks associated with PM as discussed in the '96 Staff Paper and FR notices
- CASAC Consultation on Draft Scoping Plan – July 2001
 - Proposed to carry out analysis in same 2 urban areas and solicited comment on potential expansion of scope (other urban areas, PM coarse)
 - Several PM Panel members and public comments urged expansion of analysis to cover additional urban areas
 - Various views on merits of proceeding with PM_{10-2.5} risk analyses

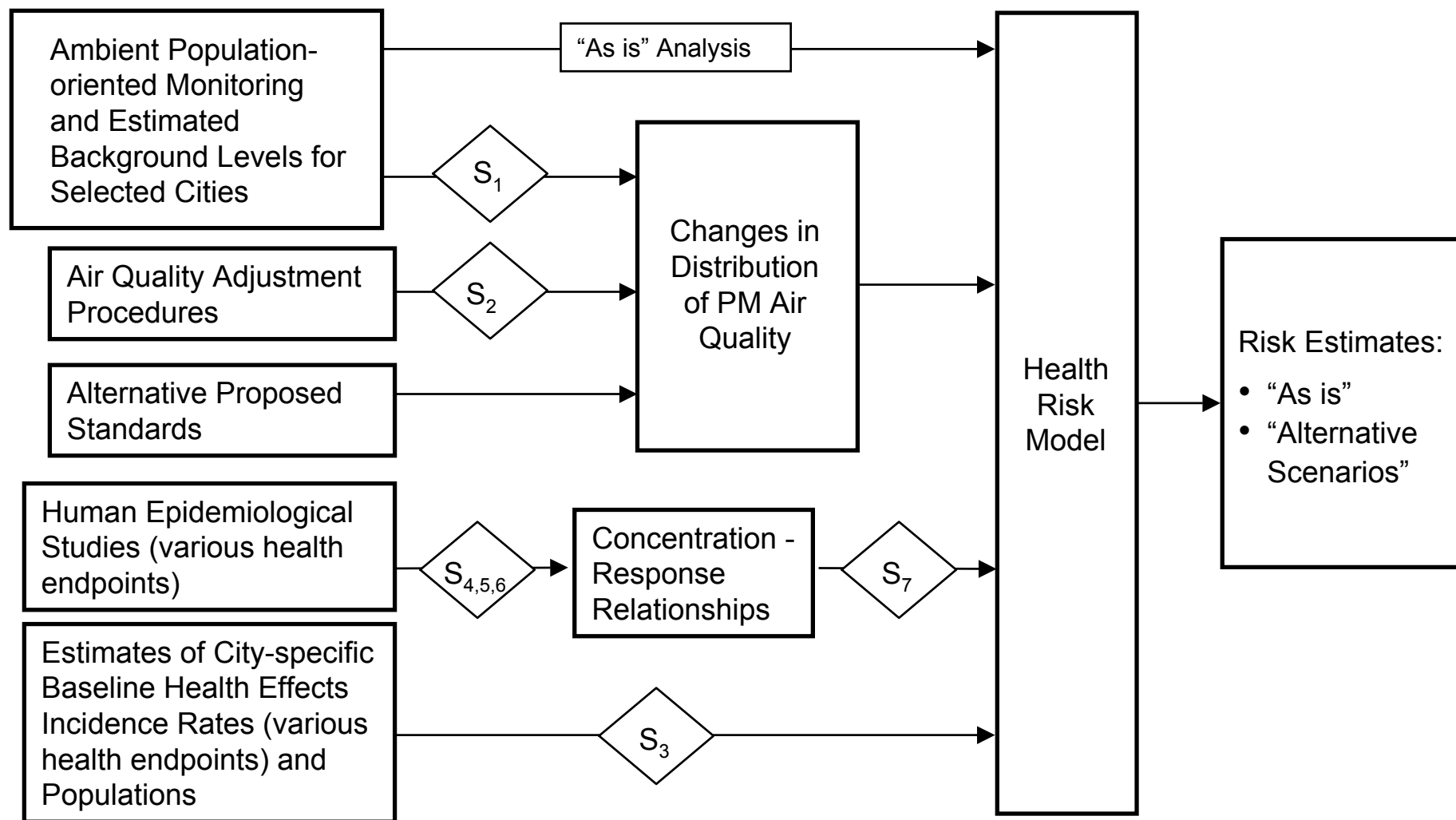
Proposed Methodology for PM_{2.5} Risk Analyses

- Draft methodology report addresses overall approach and focuses on PM_{2.5} risk analyses
- Waiting to review next external review draft of CD before making decision on whether or not to conduct PM_{10-2.5} risk analyses
- Goals of PM_{2.5} risk analyses:
 - Develop better understanding of the influence of various inputs and assumptions on risk estimates
 - Gain qualitative insights into nature of risks associated with PM
 - Provide a rough sense of the potential magnitude of PM-related mortality and morbidity associated with current ambient PM_{2.5} levels and with meeting the current PM_{2.5} NAAQS (and any alternative PM_{2.5} standards that may be recommended in subsequent draft of PM Staff Paper)

Structure of Document

- Chapter 1: Introduction
 - Background and goals for risk analyses
- Chapter 2: Overview of Methods
- Chapter 3: Selecting Health Endpoints and Urban Areas
- Chapter 4: Selecting Concentration-Response Functions
- Chapter 5 Baseline Health Incidence Rates
- Chapter 6: Sources of Uncertainty
- Appendices
 - PM_{2.5} data
 - Linear trends in historical PM_{2.5} data in Philadelphia and LA
 - Air quality, health studies, and concentration-response relationships

Exhibit 2.1 Major Components of Particulate Matter Health Risk Analyses



S_k = k^{th} Sensitivity Analysis (See Exhibit 2.5): Analysis of effects of alternative assumptions, procedures or data occurs at these points.

Exhibit 3.1 Proposed Study Locations and Health Endpoints

Health Endpoint		Urban Locations							
		Boston	Detroit	Los Angeles	Philadelphia	Phoenix	San Jose	St. Louis	Seattle
Non-Accidental Short-term Mortality	Total	X	X	X	X	X	X	X	
	Cardiovascular	X	X	X	X	X	X	X	
	Respiratory	X	X	X	X	X	X	X	
Non-Accidental Long-term Mortality	Total	X	X	X	X	X	X	X	
Hospital Admissions	Cardiovascular		X	X					
	Respiratory		X	X					X
Respiratory Symptoms		X						X	

Charge Questions & Issues

- Given the goals for the planned analyses, is the overall approach appropriate?
- Have the appropriate sensitivity analyses been included?
- Is the approach to simulating air quality just meeting the current PM_{2.5} standards reasonable?
- Have the appropriate health effect studies and C-R relationships been identified for use in these analyses?
- Is the draft report clear and transparent in its description of the proposed approach and the assumptions, and judgments that must be made?